

Who is Truly a Person with High Self-Regulation? One Who “Does the Task They Dislike First” or Who “Eats the Food They Dislike First”?

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Abstract

The purpose of this study was to clarify what personality trait determines task order. We conducted a web survey ($N=224$, 126 men and 98 women, 20-72 years age). We asked about task order in two different decision-making situations, and measured personality traits: self-regulation, BIS, and BAS. The results showed that people who start by first doing tasks they dislike had more self-regulation. For eating situations, the results indicated that people who first eat food they dislike had more self-regulation based on an automatic motivational system. Therefore, task order may involve self-regulation of different properties. In future studies, it will be necessary to approach task order from the perspective of different self-regulation: automatic self-regulation and executive function control.

Keywords: procrastination, precrastination, self-regulation, BIS, BAS

1. Introduction

We conduct various tasks in our daily lives, including homework, report writing, and housework. Having an efficient task order, for example, making a to-do list and breaking tasks down into small steps, is indispensable for completing these tasks efficiently. There have been classical theories about task order in business. Here, we focus on individual task order with self-regulation, which is necessary to do things efficiently.

In this study, we are interested in procrastination as a failure of self-regulation (Lay, 1986; Svartdal & Nemtcan, 2022). Procrastination is defined as putting off or postponing a task, anticipating future negative consequences, and causing unnecessary delays. The irrational tendency to deliberately put off a task that we must conduct soon has many maladaptive consequences. We investigate the correlation between self-regulation and task orders by focusing on procrastination and precrastination.

1.1 The Relationship Between Self-Regulation and Task Order

A growing body of recent research on procrastination has compared putting off tasks with starting a task sooner. Researchers have proposed the concept of “precrastination.” In precrastination, a person starts a task early even at a cost or by putting in extra effort (Potts, Callahan-Flintoft, & Rosenbaum, 2018; Potts, Pastel, & Rosenbaum, 2018; Rosenbaum, Gong, & Potts, 2014). Research has highlighted the desire to reduce the cognitive load caused by multiple tasks as a cause of precrastination (Fournier, Coder, Kogan, Raghunath, Taddese, & Rosenbaum, 2019; Fournier, Stubblefield, Dyre, & Rosenbaum, 2019; VonderHaar, McBride, & Rosenbaum, 2019). Rather than continuing to be burdened with subgoals, people can reduce or minimize their cognitive load by starting tasks as early as possible. Many studies have investigated the relationship between precrastination and the cognitive-load-reduction hypothesis (Rosenbaum, Sturgill, & Fegghi, 2022; VonderHaar et al., 2019).

Additionally, starting earlier on a task increases the comfort with and performance of later tasks (Rosenbaum & Sauerberger, 2019) and affects the planning and implementation of later tasks (Fournier, Coder et al., 2019). For example, Habbert and Achroeder (2020) showed that completing tasks by beginning with the most challenging ones and gradually decreasing the task difficulty, rather than vice versa, maximizes self-efficacy. Working on more challenging tasks might also help minimize negative emotions such as anxiety.

Common to these findings is the anticipation of future fears and negative emotions. It can be said that people do not want to feel bad later (or that they want to have an easier time later), so they quickly get things done first. Several studies have revealed a relation among future fear, pain anticipation, and decision-making behavior. For example, Harris (2012) reported that specific participants put off negative/aversive tasks, whereas others started them earlier. In other words, the anticipation of fear and pain influenced people's decisions about when to start negative/aversive tasks, and people chose to start a task earlier to minimize this anticipation.

Thus, the concept of procrastination in anticipation of the future may arise. How is self-regulation related to this procrastination? As above, some people procrastinate and put off tasks they dislike, whereas others do the tasks they dislike first. Self-regulation refers to the conflict between desires/impulses that can be satisfied now and valuable rewards that can be obtained in the future (Mischel & Ebbesen, 1970; Mischel, Shoda, & Rodriguez, 1989). For example, a person might resist a beer now to maintain and improve their health. To successfully regulate conflicts, they must anticipate future emotions and situations and resist short-term impulses and desires (Hofmann, Baumeister, Förster, & Vohs, 2012). If the person's control fails and they act upon their impulses and desires, the person falls into a control disorder (Baumeister & Heatherton, 1996). Adachi and Adachi (2021) asked participants whether they first "start with a task or tasks they like" or "start with a task or tasks they dislike" among different tasks with a deadline. Their results indicated that people who first do a task they dislike have high self-regulation. People must inhibit other temptations in present for future gratification to start doing what they dislike first. This requires self-regulation. Therefore, we predicted differences in self-regulation between people who start by first doing tasks they dislike and those who start by first doing tasks they like. We expected that the former would have more self-regulation, and the latter would have less self-regulation.

1.2 The Relationship Between BIS/BAS and Task Order

A similar phenomenon has been observed in eating situations in daily life. Some people eat food they do not like first, leaving the food they like for later.

Studies have clarified the association between self-regulation for eating healthy foods and avoiding unhealthy foods (Bonar, Rosenberg, Hoffmann, Kraus, Kryszak, Young, Ashrafioun, Pavlick, & Bannon, 2011; Muraven, Collins, & Nienhaus, 2002). However, only a few studies have investigated the order of eating food in a meal. Short-term self-regulation might be related to attitudes about eating behavior, such as whether a person eats their favorite food first or later. Eating is a physiological need and an automatic, habitual behavior. Therefore, it is an element and a foundation of preadaptation to social adaptation (Wasserman, 2019). It is necessary to examine the biologically based self-regulation of eating behavior because eating is indispensable for maintaining life. Therefore, the current study focuses on the previously unexplored relationship between eating order and types of self-regulation.

The current study focuses on automatic self-regulation resulting from two motivational systems: approach orientation for approaching pleasure and avoidance orientation for avoiding discomfort (Carver & White, 1994). The former is the Behavioral Approach System (BAS) for obtaining rewards, and the latter is the Behavioral Inhibition System (BIS) for avoiding punishment. Hofmann et al. (2012) discussed the influence of desire, conflict, regulation (resistance), and behavior enactment by BIS and BAS. They reported that people who scored high on BAS generally desired strength, and people with a strong BIS were less likely to act out their desires. Thus, the BIS scale predicts a general tendency to inhibit motivated behavior. People who first eat the food they dislike believe they are close to resisting their desire to eat their favorite food when it is in front of them. If they eat their favorite food first, they become motivated to avoid the punishment of eating the remaining food, which they dislike. Therefore, it is possible that those who eat the food they dislike first are more motivated by avoiding unpleasantness than those who eat the food they like first, who might anticipate in the future (the end of the mealtime) and self-regulate based on the automatic motivational system. Indeed, studies have indicated that the BIS trait may consist of a fairly automatic and unconscious pattern of response inhibition with theoretical roots in animal behavior (Gray, 1970). Moreover, procrastination is an automatic response tendency to reduce cognitive load (Blinch & DeWinne, 2019; Fournier, Coder et al., 2019; Fournier, Stubblefield et al., 2019) and to minimize fear and negative emotions (Harris, 2012). Therefore, we expect differences in the BIS trait between people who eat the food they dislike first and those who do not eat the food they dislike first. We expect that those who eat the food they dislike first have higher BIS because they are more sensitive to punishments and have a defensive maneuver, possibly designed to avoid risk.

1.3 This Study

We design this study to identify how self-regulation determines task orders. The current study focuses on task order in two different decision-making situations to identify personality traits associated with each task order. We

assess health management (frequency of exercising, smoking, alcohol drinking, and dietary status), impulsive buying tendencies, money management (frequency of exceeding credit card limits and frequency of getting into debt), and aggression as indicators of self-regulation. The participants respond to two questions: “Do you start with tasks you like?” or “Do you start with tasks you dislike?” (A) We hypothesize that participants who indicate they first do the tasks they dislike would have better self-regulation than those who first do the tasks they like. We also ask participants if they “first start eating the food they like” or “first start eating the foods they dislike.” (B) We hypothesize that participants who first eat the food they dislike would have higher BIS scores than those who first ate the food they like.

2. Method

2.1 Participants

Fastask, a polling company, conducted an internet survey. Adult participants at work, randomly selected from monitors registered with Fastask, participated in the survey, and responded to a questionnaire package. We collected data of 224 employees (126 men and 98 women, M age = 43.02 years, SD = 12.93, age range = 20-72 years). The responses of monitors without missing values were analyzed. We conducted this study with the approval of the ethics committee of the author’s affiliated institution.

2.2 Measures

2.2.1 Task Order as the Dependent Variable

First, we asked participants to choose one of the following sentences that best described their behavior when facing multiple tasks with an extended deadline: (1) I am the type of person who starts with the easy task and (2) I am the type of person who starts with the difficult task. Next, we asked respondents to indicate whether they ate their favorite food first or later by inquiring, “Imagine you are eating a meal. Which type are you?” The respondents chose one of two responses: (1) I eat what I like first and (2) I save what I like for last. We then instructed the participants to proceed to the next question.

2.2.2 Study Time Measure

We asked participants about the average time they spent studying as a high school or junior high school student per day. The participants selected one of the following options: less than 30 minutes, 30 minutes-less than one hour, one hour-less than two hours, two hours-less than three hours, three hours-less than four hours, four hours or more, and do not remember. We treated the “don’t remember” response as a missing value.

2.2.3 Health Management Measures

Participants responded about their exercising frequency by selecting one of the following options: (1) not exercising at all, (2) not exercising much, (3) exercising occasionally, and (4) actively exercising. They also responded about their smoking frequency by selecting one of the following options: (1) smoking daily, (2) smoking sometimes, (3) smoking occasionally, and (4) do not smoke. Participants indicated their alcohol consumption frequency by selecting one of the following options: (1) drink daily, (2) drink sometimes, (3) drink occasionally, and (4) drink little or not at all. Finally, participants rated their dietary habits in response to 4 items: “I pay attention to the contents of my diet and my calorie intake as much as I can (within reason).” The participants responded using a 5-point scale ranging from 1 (Does not apply) to 5 (Applies).

2.2.4 Impulse Buying Tendency Measure

We used the 9-item Buying Impulsiveness Scale (Japanese Version; Harada, Yoshizawa, & Yoshida, 2010). We asked participants to rate the extent to which each item applied to them on a 5-point scale ranging from 1 (Does not apply) to 5 (Applies). We analyzed the mean scores (α = .90, M = 2.60, SD = 0.83).

2.2.5 Money Management Measure

Participants responded about the frequency of exceeding their credit card limits by selecting one of the following options: (1) often, (2) sometimes, (3) rarely, (4) never, or (5) do not have or do not use a credit card. We treated response (5) as a missing value. The participants also selected one of the following options regarding the frequency of experiencing debt: (1) often, (2) sometimes, (3) rarely, or (4) never borrowed money from banks or other sources (including friends and family) in the past year. Only participants who had agreed to disclose money-related information responded to these questions.

2.2.6 Aggression Measure

We used the 10-item Aggression Scale (Japanese Version; Ando, Soga, Yamasaki, Shimai, Shimada, Utsuki, Oashi, & Sakai, 1999) to assess short temper (5 items) and verbal aggression (5 items). We asked participants to

rate the extent to which each item applied to them on a 5-point scale ranging from 1 (Does not apply) to 5 (Applies). We then analyzed the mean scores ($\alpha = .80$, $M = 2.79$, $SD = 0.66$).

2.2.7 BIS/BAS Measure

We used the 20-item BIS/BAS Scale (Japanese Version; Takahashi, Yamagata, Kijima, Shigemasu, Ono, & Ando, 2007). Participants were asked to rate the extent to which each item applied to them on a 4-point scale ranging from 1 (Does not apply) to 4 (Applies). We analyzed the mean scores (BIS (7 items); $\alpha = .79$, $M = 2.71$, $SD = 0.57$, BAS (13 items); $\alpha = .89$, $M = 2.61$, $SD = 0.53$).

3. Results

3.1 Task Order

We conducted logistic regression analysis with task order as dependent variables and self-regulation measures as explanatory variables (Table 1; model fit: $R^2 = .26$, $\chi^2(11) = 20.68$, $p < .05$). The results indicated that people who first did the tasks they disliked drank less frequently, had better diet-related health management habits, and were less frequently in debt than people who first did the tasks they liked.

3.2 Eating Order

Next, we conducted logistic regression analyses with eating order as dependent variables and self-regulation measures as explanatory variables (model fit: $R^2 = .18$, $\chi^2(11) = 23.90$, $p < .05$). The results indicated that people who first ate the food they disliked spent more time studying and had higher BIS than those who first ate the food they liked. These results generally supported the hypotheses of the current study.

Table 1. Results of logistic regression analysis

	Start with easy task = 0 Start with difficult task = 1			I eat what I like first = 0 I save what I like for last = 1		
	β	Odds ratio	Z	β	Odds ratio	Z
Study time	.080	1.121	.968	.219*	1.344*	2.443*
Exercising	-.104	.803	-1.168	.005	1.009	.048
Smoking	-.022	.964	-0.233	.044	1.073	.464
Alcohol drinking	.197*	1.436*	2.183*	.050	1.091	.541
Dietary status	.198*	1.675*	2.118*	.044	1.115	.498
Impulsive buying tendencies	.119	1.363	1.270	-.022	.948	-.210
Exceeding credit card limits	.146	1.488	1.274	.052	1.143	.537
Experiencing debt	.252*	1.848*	2.188*	.178	1.510	1.776
Aggression	-.141	.592	-1.691	-.099	.704	-1.010
BIS	-.015	.943	-0.161	.223*	2.254*	2.325*
BAS	-.042	.837	-0.529	-.055	.800	-0.593

Note. * $p < .05$

4. Discussion

4.1 The Influence of Self-Regulation on Task Order

This study aimed to determine the relationship between self-regulation and task order in two different situations. People who started with tasks they disliked tended to have more self-regulation for health and money management, suggesting that conscious self-regulation governed their actions. In contrast, people who started with tasks they liked tended to show less self-regulation, supporting the findings of previous procrastination studies.

4.2 The Influence of BIS/BAS on Eating Order

The results of mealtime situations indicated that people who first ate food they disliked had more self-regulation for studying and were associated with punishment avoidance. The decision to eat the disliked food first involves the automatic and unconscious pattern of the response system and behavioral inhibition for avoiding punishment of eating the remaining food, which they dislike.

In eating situations, the behavior of resisting one's favorite food until the end requires self-regulation (Mischel & Ebbesen, 1970; Mischel et al., 1989). Further, eating one's favorite food first is associated with high impulsivity based on short-term motivations (Baumeister, Tice, & Vohs, 2018). However, the behavior of resisting one's favorite food is related to behavioral inhibition and the automatic motivational system associated with punishment avoidance. Two reasons for this are discussed. First, achieving efficient engagement requires conscious self-regulation to cope with immediate desires and temptations standing in the way of future goals. However, it is unrealistic to assume that all daily-life actions are conscious. Self-regulation failures might lead to regret, but people might also learn through repeated self-regulation attempts. Repetition leads to habits that facilitate efficient behavior without conscious self-regulation (Gillebaart & de Ridder, 2015; Miyake & Friedman, 2012). Eating is a routine activity and a habituated behavior. Short-term activities might not require conscious self-regulation and might be based on self-regulation through the automatic motivational system, which is sensitive to rewards and punishments. In contrast, work-related task orders might involve a wider variety of situations and might not necessarily be habitual compared to regular, routine acts. Doing a disliked task first requires conscious self-regulation to pay the cost of doing that task. This study's results indicated two types of task orders: task orders requiring conscious self-regulation in decision-making situations and task orders based on automatic motivational systems not requiring conscious self-regulation in mealtime, habitual situations.

Second, those who eat foods they dislike spend more time studying. This is because the punishment for neglecting their studies will be revealed in the near future. This pattern is similar to that of the eating situation, in which anticipation of relatively immediate negative effects is considered to be an automatic response to the need to control one's desires. At the same time, failure to control alcohol consumption and weight does not necessarily have an immediately adverse effect on health. Achieving this kind of control requires the ability to anticipate the relatively distant future. The function of anticipating some long-term future is a higher-order function in a task. Meanwhile, in the decision-making process of eating food to ensure basic survival, decision-making to suppress short-term impulses is based on theoretical roots in animal behavior (Gray, 1970). Conscious self-regulation has been associated with the long-term choice of task order, and automatic self-regulation has been associated with mealtime activities. Hence, in contrast to task order, predicted a different trend in eating order.

Although people who eat from their favorite foods first are predicted to have lower self-regulation, this is not simply related to impulsivity. Some findings suggest that leaving disliked foods for later (i.e., procrastination) does not necessarily have negative but positive consequences. For example, it has been argued that people actively procrastinate because of their high self-efficacy at accomplishing tasks even if they are late (Chun Chu & Choi, 2005; Graff, 2019). Indeed, it has been previously shown that high self-evaluation scores are associated with a willingness to accept risks; in contrast, low self-esteem scores are associated with unwillingness to accept risks, avoidance of strategic ploys, and reluctance toward self-protection (Baumeister, Tice, & Hutton, 1989). In other words, it is possible that people who eat their favorite foods first may have lower BIS propensity but higher self-evaluation.

5. Conclusion

The present study focused on task order in two different decision-making situations and provided a new perspective on self-regulation. It is clarified that task orders requiring conscious self-regulation in decision-making situations associated with the long-term choice of task order, and task orders based on automatic motivational systems not requiring conscious self-regulation associated with mealtime activities.

Efficiently engaging in different tasks in our daily lives has crucial implications for our well-being. The novelty of the present study is that we included not only general tasks but also mealtime tasks and examined their relationships to dispositional self-regulation. This study offers new possibilities for investigating food self-regulation.

5.1 Limitations and Future Research

This study investigated different decision-making situations. In the future, we plan to experimentally examine whether people use conscious and automatic self-regulation with task orders and eating orders, respectively. The current study only investigated the effects of aversion, but there is also a need to investigate the effects of task difficulty and the combination of task difficulty and aversion (Habbert & Achroeder, 2020). In addition, we suggest that future studies focus on whether individual differences in temperament are related to the order in which people eat and whether these differences were acquired during human evolution.

About Conflicts of Interest

The authors have no conflicts of interest related to the findings of this study.

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